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ABSTRACT

This document contains three papers from a symposium on charting the future of human resource development (HRD). "Choose Your Future: Independent Technomancer or Holistic Human Developer" (Steven W. Semler) reports a study that used an historical vector analysis approach to identify three major changes in the roles of HRD professionals that offer the choice of two new core areas of HRD practice: shift toward participant responsibility for HRD outcomes, increasing use of technology as an instructional delivery method, and requirement for HRD to deliver quantifiable performance improvement to gain the credibility needed to provide more holistic human development opportunities. "Current and Future Topics in Human Resource Development: Linking Research with Practitioner Needs" (Tim L. Wentling, Erica D. Brinkley, Eric Nelson) focuses on a study that identified "hot topics" in HRD from the academic and practitioner viewpoints, including instructional technologies, linking HRD to strategy, self-directed learning, training transfer, distance education, learning organizations, and HRD return on investment. "Re-searching Human Resource Development: Societal Functions of Training and Education" (David J. Little, Kevin P. Quinlan) describes a project to investigate how HRD practices are undertaken in the workplace and how knowledge about HRD is or can be reconstructed in an organization that is involved in the ongoing training and education of its membership. (YLB)

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24 Charting the Future of HRD

Chair: Timothy R. McClernon, Piper Jaffray, AHRD Global 100 member

Choose Your Future: Independent Techomancer or Holistic Human Developer
Steven W. Semler, University of Minnesota

Current and Future Topics in Human Resource Development: Linking Research with Practitioner Needs
Tim L. Wentling, University of Illinois at Urbana-Champaign
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Re-searching Human Resource Development: Societal Functions of Training and Education
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Choose Your Future: Independent Technomancer or Holistic Human Developer

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This study used a historical vector analysis approach to identify three major changes in the roles of HRD professionals: a shift toward participant responsibility for HRD outcomes, the increasing use of technology as an instructional delivery method, and the requirement for HRD to deliver quantifiable performance improvement to gain the credibility needed to provide more holistic human development opportunities. These trends offer the choice of independent technomancer or holistic human developer to future HRD professionals.

The human resource development field is at a crossroads. Social, economic, and technological pressures will offer two different paths to HRD practitioners. The trend toward technology-designed and delivered learning is one dominant path. A holistic approach to human development is the other. If HRD professionals cannot read the signposts before they cross the intersection, then they may forfeit the ability to choose their own futures. The purpose of this paper is to serve as a road map of the trends and future predictions about the nature of HRD as it moves into the twenty-first century.

No method of predicting the future is perfect. We can, however, improve our predictive ability by systematically examining trends and influences in each area of relevance to HRD. This study uses a *historical vector analysis* method to provide some answers to the question of what the field of human resource development will be like in the next five to ten years.

Methods

Historical Vector Analysis. The method used in this study is a hybrid of historical research technique and the author's conception of *historical vector analysis*. This viewpoint treats historical trends as vectors composed of two parts–a direction component and a strength or significance component. The direction of the vector represents the movement of the object of study toward some coherent, identifiable destination. On a dimension of performance review feedback sources, for example, there has been a demonstrable trend toward the use of 360-degree feedback tools (Callender, 1996). This would provide a direction for the historical vector of "toward increasing use of multi-rater feedback." The strength of the vector represents how much influence the trend exerts on research and practice within its dimension. The strength of the vector could be indicated by a numerical score combining (a) incidence of the topic in popular, trade, and research publications, (b) potential of the topic or trend to force or influence change within the dimension, and (c) the rapidity with which the topic flourished in the literature. The greater the trend scores on each of these three scales, the greater its vector strength will be.

Vectors should be examined in relationship to a matrix of variables of interest to the researcher. A single combination of variables will typically, but not always, have only one vector representing a dominant trend. Each cell in the matrix will pertain to a specific topical area or combination of variables, *agency of learning in individual training contexts*, for example. This cell explores the issue of who should control the delivery, content, and pace of individual training. In the past, practice favored instructor-led learning. Recently, however, learner-centered methods have started to become more common. Because the prevalent activity in the dimension is moving toward learner agency, this is the direction of the vector. If there were no discernible movement in research or practice in this cell (i.e., instructor-led methods were accepted as best), the vector would be a *zero-vector*, or one that displays no trend movement. Similarly, the strength of this vector would be determined by how much was written about the trend, the impact

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of the trend, and how fast articles about it were published. Note that relatively new topics and ideas may have very little published about them, but still hold implications of significant change that increases the relevant vector strength.

The application of this methodology follows the following process:

1. Identify the problem and select possible interest variables from previous literature and practice.
2. Select context variables that influence the specific field of interest.
3. Select field of interest variables that form a parsimonious matrix.
4. Identify sources that meet conceptual criteria as artifacts of historical trend data.
5. Identify specific vectors, and their direction and strength from the selected data sources for each cell of the matrix.
6. Describe the pattern of relationships and interactions between vectors in the matrix.
7. Project the vectors into the future and use the pattern of relationships to draw predictive conclusions.
8. Summarize and explain the future state predictions and the implications that the vectors pose to the original questions of interest.

For this study, the author chose to examine a three-dimensional matrix of 4x3x3 variables. The matrix vectors are described by the form of (*HRD issue x HRD activity x context forces*). Primary HRD issues form the first dimension. These represent the following four questions:

1. *Control*: Who should control the initiation, selection, resourcing, and results of HRD activity within an organization?
2. *Content*: What kind of HRD activity should be done within the organization?
3. *Method*: How or through what media should HRD activities be delivered within the organization.
4. *Agency*: What role should the individual or group have in creating, guiding, or directing the HRD activity in which they are participating?

These issues operate in the second dimension of the matrix; the primary areas of HRD activity: training and development (T&D), career development (CD), and organization development (OD). Social, economic, and technological contexts may strongly influence the current and future trends in research and practice. These contextual factors form the third dimension of the matrix. These three dimensions combine to form the vector matrix shown in Figure 1. Each vector can be described as a trend representing the effect of the context variables on the HRD issue as it pertains to the category of HRD activity.

	Control	Content	Method	Agency
Training & Development	Social → Economic → Technological →			
Career Development				
Organization Development				

Figure 1. 4 x 3 x 3 (issue, activity, context) vector matrix of HRD future dimensions.

The same vector direction may be present in more than one cell. There is some evidence to suggest, for example, that the direction and responsibility for HRD activity is shifting toward individuals and away from the central organization in all three HRD activity areas. This may represent a major trend with implications for future HRD research and practice. As such, it would be identified as a major thematic trend.

Powerful computer modeling software could be used to help researchers develop and test

different models using the vector data provided by the historical vector analysis technique. This activity is beyond the scope of this present study, however, although additional validity could be gained from such model testing.

Data Sources. The data sources for this study were ten popular, practical, and research publications. *US News and World Report* and *Time* represented the social context. *Businessweek* and *Fortune* magazines represented the economic context. *Popular Science* and *Wired* magazine represented the technological context. *Training* magazine, *Training & Development*, the *Human Resource Development Quarterly*, and the *Performance Improvement Quarterly* represented the HRD context for practice and research. The article titles in each publication served as historical artifacts of interest and thinking over the period from 1990 to 1996. The criteria for selection were that the periodical had to have (a) relevance to the selected dimension, (b) broad circulation and audience, (c) articles produced by many authors and edited by the publisher, and (d) articles about current trends and news or research within the selected dimension. Another consideration for source selection was the researcher's ease of access to the data through on-line computer databases.

Data Collection. The researcher compiled a list of all article titles in the source publications for the period from January 1, 1990 to December 31, 1996. These article titles formed the basis for the direction and strength of the historical vectors in each of the selected dimensions. Tables of contents, abstracts and article texts were used successively to determine the degree of significance and controversy generated by any given article.

Data Analysis. Each article was assigned a direction component for a cell in the matrix if it described a contextual influence upon the cell or provided evidence of a technique or trend relevant to the cell. The direction of each vector was described as "toward X," with X being the conceptual direction toward which the article suggested that movement was being made. Articles having no related direction were labeled *zero vectors*.

The strength of each non-zero vector was scored after identifying all direction vectors according to three criteria. The first criterion represented the *prevalence* of the trend in the literature. This was the total number of times that the vector topic was mentioned as an article title or main topic, as a percentage of the total number of all non-zero vectors. The second criterion represented the *relative impact* of the trend. It was scored by the degree of departure that it represented from previous practice. Each vector received an integer score from 0 to 1 (0=no change, .25=innovative change or modification of previous methods, .50=inventive or new concept, .75=fundamentally different approach or method, 1.00=fundamentally different approach or method that invalidates or replaces previous methods). The third criterion represented the *relative speed* with which the trend vector spread in the source publications. It was scored as the average number of articles published per month on the topic from first to last incidence as a percentage of the highest number of articles published in all sources in a month. These three scalar elements of each vector are averaged to produce the vector strength.

The researcher then used the vector contents of the matrix to build an overall system model. This model illustrated major relationships between the variables, identified larger (multi-cell) trends, and possible implications of the trends for the future shape of the field of HRD. The system model also suggested possible future answers for the HRD issue x HRD activity cells. This system model provides the basis for the discussion of trends and results.

Results

The (preliminary) historical vector results of the study are shown in Figure 2. The research identified 39 major trend vectors. Fifteen vectors applied to training and development, ten to career development, and fourteen to organization development. Twelve vectors applied to the control issue, thirteen to the content issue, eleven to the method issue, and three to the relatively simple agency issue.

	Control	Content	Method	Agency
Training & Development	→ Outsourcing → Performance Orientation → Decentralization → Evaluation of HRD → HRD as Business Partner	→ Basic Skills Education → Computer Literacy → Team Skills → Thinking Skills → Knowledge Creation and Handling Skills → Work/Family Skills	→ Interactive Technology Delivery of Training → Increasing Use of Computers and Technology → Increasing Capability and Use of EPSS	→ Greater Role of Individual in Learning
Career Development	→ Personal Continuing Education → Self-managed Careers → Decreasing Life Cycle of Job Knowledge	→ Transferable Skills → Computer Skills	→ Performance Coaching → Collaborative Peer Networks → Internet Forums → Continuing Education	→ Individual Career Responsibility with Organization Support
Organization Development	→ Greater Involvement of Stakeholders → Increasing Speed of Change → Increasing Flexibility Required → HRD as Business Partner	→ Learning Organization → Lean Production/ Downsizing → Increasing Automation → High Performance Work Systems → Organizational Learning Systems	→ Large Scale Interventions → Collaborative System Design → Alignment → Computer-aided OD Interventions	→ Greater Role for Individual/ Stakeholder Partners in Change Process

Figure 2. Resultant vector matrix. Each cell lists the major trend vectors relevant to the combination of variables that describe the cell.

Discussion

Dominant Trends in HRD. From the vectors identified in this study, there appear to be three major categories of movement within the field of human resource development. The first is the increasing role of individuals in the control and outcome of HRD. This mirrors trends in the broader social context giving more choice and power to the individual. The second trend category is the increasing use of technology in work place learning and performance roles. As technology continues to improve in capability and cost effectiveness this trend will increase in importance. The third category of change facing HRD is change within the economic and organizational context in which it operates. Economic demands on organizations place increasing pressure on HRD practitioners to focus on quantifiable performance improvement and the payoffs of HRD. This also offers the opportunity for HRD professionals to become business partners in their organizations, helping to define strategic direction and support major initiatives. The economic context will also support additional reduction of the labor force through technological replacement or outsourcing. Each of these trends deserves additional explanation.

The Power of the Individual. As organizations continue to withdraw traditional career development support and their organizational structures flatten, they are also giving more power to their employees. Part of this power comes in the form of obligation; part of it comes in the form of opportunity.

Organizations will continue to expect their employees to shoulder a greater share of the knowledge-based responsibilities that once were the sole province of management. Some of these include customer relationship management, strategy development, market intelligence gathering, and the development of employee productive capability (Bassi, Benson, & Cheney, 1996). The organization gains a benefit in productivity and knowledge generation from this arrangement, and the employees can gain greater satisfaction and personal development from their roles. Employees who do not perform well in these roles, however, become vulnerable to layoff or career stagnation. The competitive economic environment in which the organizations exist make the full utilization of all employees a requirement for market survival.

Employees gain some significant benefits from this trend, as well. They expect and receive

greater control of their working conditions and a greater voice in the decisions that affect their economic and emotional lives. Individuals can use new technologies to learn in ways that accommodate their preferences and heighten their interest in the instructional content. Diversity and work-family management training content also offer people a greater learning benefit beyond the immediate job tasks. Broad-based skill training gives employees skills that can help make them "layoff-proof" (Mumford & Peterson, 1995). People who improve and maintain marketable skills and abilities are able to find new and interesting positions within their current organizations or elsewhere in the job market. On the organizational side of this trend, employees benefit from the large scale collaborative intervention strategies by gaining the chance to participate in decisions and to improve the quality of design and implementation of changes that affect them (Dannemiller & Jacobs, 1992). Again, this enhances the quality of both the organizational and the individual outcomes. Organizations are beginning to believe that individual empowerment is a win-win situation for everyone. Going beyond the specific job task requirements to enhance the ability of individuals to perform for themselves and the organization is a more holistic approach to HRD that is becoming more prevalent.

The Power of Technology. The increasing use of technology as a training delivery method is directly related to the increase in the utility and cost-effectiveness of the new technological tools. Technology like multimedia training courseware, internet or intranet training delivery, electronic performance support systems (EPSS), and distance learning and teleconferencing tools offer two significant advantages to cost and performance-conscious organizations. Automated technology has the potential to deliver instruction at a lower cost than instructor-led methods. It also offers a better application of adult learning principles for some content areas that enhances the learning and performance abilities of the learners (Tennyson, 1994). The inclusion of practical exercises, games, and simulations in computer-based training is an example of this enhanced learning potential. An additional advantage of technology-based training is that it can be used asynchronously. No longer will employees all have to be away from their work stations for extended periods to participate in training. Instead, they can access the training and simulation software from their desktop computers and work through the course content at their own pace. This reduces the time that employees spend off their primary tasks and can also significantly reduce travel costs.

One of the difficulties with technology is that it enables the displacement of employees as their job tasks are automated. Those employees most likely to be displaced are those with the least marketable skill sets (Tapscott, 1996; Rifkin, 1995). The reason that they are displaced is because the jobs they hold require little higher thinking skills and are, therefore, the best targets for automation. The people displaced by technology often have no other alternative than to accept low-paying service sector jobs. Another difficulty is that the ability to operate technology efficiently takes additional training and practice. Technological literacy will continue to be a major requirement of employees and educational systems for the foreseeable future. The skills required to design and build computer-based courseware are currently in short supply. As the demand for computer-based training increases, the position of multimedia instructional author will become an important HRD role.

The Power of the Economy. Economic forces emphasize three major trends in HRD practice. Each of these trends has the result of increasing performance or decreasing cost to the organization. Both results help the organization compete and stay viable within its market.

HRD activity within an organization can be viewed as either a cost or an investment. It is the challenge of HRD professionals to demonstrate to a cost-conscious executive management the value of their work. As mentioned earlier, the cost of training delivery is one of the reasons that computer-based instruction is gaining such emphasis. Strong evaluation techniques and a performance orientation are core requirements for success in this environment (Swanson & Gradous, 1990). HRD activities must be designed and aligned with the broader goals of the organization in mind.

When HRD practitioners have the ability to demonstrate improvements in individual and organizational performance made through their activities, they can gain the credibility necessary to become partners in the business. As business partners, they can help set the strategy of the

organization, make resourcing decisions, and champion the cause of human resource development as a competitive advantage. In this role, HRD professionals have a dual mission. They must deliver quantifiable performance improvements to maintain their credibility. This credibility allows them to work proactively to increase the learning capability of the organization. Implementation of the learning organization concept and organizational learning systems to support it play heavily in the continuing development of the knowledge generating capacity of people and systems within the organization. This holistic strategy, increasing performance through human and organizational development, offers increasing rewards to organizations that pursue it.

It is quite likely that HRD professionals will have to follow this strategy with fewer resources (Bassi et al., 1996). Automation and the inability to explain the performance contribution of their work has allowed organizations to reduce the size of their training and HRD functions. Outsourcing of HRD work will continue to grow, although many organizations may increase the overall size of their HRD staff as work place learning becomes more important to competitive performance. Much of the work outsourced is and will continue to be of two types: work requiring special expertise and work infrequently required by the organization. The new HRD professional role of multimedia courseware designer meets both of these criteria, making it quite likely that computer-based training will be provided by external consultants or multimedia vendors.

Implications. Technology and the social forces affecting business, government, education, and the non-profit sector are changing the context in which human resource development activities take place. It is not only the demand for HRD work that is changing, but also the type of HRD activity. Stand up training is giving way to interactive computerized learning activities. Managed career development plans have been replaced by portable, self-managed career planning kits. Traditional organization development (OD) activities are being displaced by reengineering and large scale interactive processes. The increasing speed of change made possible by technology and made necessary by global competition is also driving up the rate of change in HRD activities. Technology, interestingly enough, is forcing both specialization and diversification into two new core areas of HRD practice. The first of these is the computer-based training and multimedia design expert, referred to whimsically as a "technomancer." The second is that of the holistic human developer, a professional who facilitates the unleashing of human potential across the arbitrary boundaries of work, family, school, or community and focuses on whole person development.

Independent Technomancers. Development of sophisticated interactive multimedia training tools, as well as learning delivered through electronic performance support systems (EPSS) and the Internet, demand a new set of skills from those previously held by HRD professionals. Mastery of the principles of adult learning, instructional design, and organizational systems will allow these professionals to command high fees and interesting work. Their products will replace the need for human trainers, reams of printed instructional material, and huge blocks of non-productive time.

These technically sophisticated professionals are becoming course designers, presentation experts, and project contractors to other organizations. The great majority of this new instructional design work is being done by small independent consulting teams consisting of only one or two people. This has implications for both the flexibility and the job security of these independent "technomancers." In as much as the independents are technical experts in both computer-based training development and in HRD theory they will not lack for work. They will generally be able to take a wide variety of jobs and the best of them will be able to pick and choose the most interesting and rewarding from among the contracts available. The flip side of this is that these new HRD technomancers will be independent consulting contractors. There are no guarantees of income, job security, or health care benefits in the world of the independent consultant. Additionally, one of the primary reasons for the growth of the HRD technomancer's business is the downsizing and outsourcing of internal training and development resources. It is a fact of reality that not all of those displaced by technology have the skills and ability to take new positions among the ranks of the technomancers. Many will take early retirement, attempt to

become consultants in a diminishing non-technical market, or be forced to accept jobs in other occupations; often at wages up to 40% less than they previously enjoyed (Rifkin, 1995). This unfortunate fact mirrors the technological displacement of workers in other areas of the economy. Certainly, new jobs are being created. The continuing trend, however, is toward a dual system of a relative few very highly skilled jobs at high pay and a great number of low to moderately skilled service jobs for low pay. Other social forces may address this problem by reducing the length of the work week from forty to thirty or twenty hours, or by providing a guaranteed minimum wage and expanding the "social economy" (Rifkin, 1995). The likelihood is high, however, that even the professional work of HRD specialists will not be immune to replacement by technology. Retraining and continuous, lifelong learning are not just watchwords for blue collar employees. HRD practitioners must continually gain new skills to stay on the cutting edge and to continue to add value to their organizations and clients.

Holistic Human Developers. Technology may bring people together or increase their isolation from one another. Business-education partnerships, corporate mergers, advancing technology, and ecological science make us more aware that we live in interconnected systems. This awareness forces people to recognize that there are parallels between the systems of technology with which they work and the systems of society, community, work, and family within which they live. Family and free time are becoming important factors in career planning. Government and business organizations promote lifelong learning for both organizational and individual health and development. Human resource development professionals lead more seminars on creativity, humor, and stress management than ever before. The boundaries between home, work, school, and community have begun to blur. In this new environment the skilled HRD practitioner with a holistic perspective of human development will become more valuable.

Human resource development can be said to be a "process of developing or unleashing expertise for the purpose of improving performance" (University of Minnesota, 1994). We can expect to see this definition pushed a step further, to include two new terms: human potential and human life. The future definition could then become "a process of developing or unleashing human potential for the purpose of improving human life." HRD professionals will do more than train or facilitate; they will help people unleash their own potential to improve their lives.

Trends toward increased use of executive coaching support this conclusion. Not only are executive coaches providing leadership mirroring and career development coaching, but they are also helping execs to balance work and family roles, to find ways to maintain physical and emotional fitness, and to balance community, organizational, and employee stakeholder interests. Many executive coaches contract with their clients to develop the whole person. This holistic perspective can be extended to other HRD activities. Where trainers previously facilitated learning in specific task areas, they are increasingly becoming coaches and advisors to first line managers and supervisors who are taking over the direct skill-building role for their employees. HRD experts in the organization development arena are bringing in more stakeholders to participate in change processes, with the goal being a greater range of options, better information, and a broader base of support for collaborative decision making and implementation (Dannemiller & Jacobs, 1992; Weisbord, 1995). These are a few of the examples that suggest movement toward a broader, more holistic perspective of human resource development.

Eventually, some writers argue, the term "human resource" will be obsolete (Harkins, 1996). People will no longer be seen as resources, but as partners in a collective activity. The objective will be to develop the whole person, the whole group, the whole organization, the whole community in order to solve problems and to unleash the greatest possible potential of the participating people or systems. Many of our present organizations are at the verge of a transition from HRD activities directed at specific business goals to using HRD expertise to unleash the unknown potential of people and groups; and counting on the results to be beneficial to their organizations. It is the serendipitous wonder of human potential that holistic human developers can offer to their organizations and clients in the future. In the area of human development, the frontiers are still beyond us, waiting for us to explore and chart them.

Summary

Changes are coming that will force HRD practitioners to make choices between a specialization in technology and a holistic human development skill set. Where the categories of work in the field have been previously divided by content area (training, OD, career development), the new paths will also differ categorically by method (technology-delivered, coaching, team facilitation). The content of the HRD field will certainly change somewhat, but the trends suggest that it is the method of the HRD process that will change the most. Old development techniques will be abandoned in favor of more effective, lower cost, and lower overhead approaches.

Technology and the competitive environment are driving these changes. Executives expect more measurable results from their HRD experts. In order to gain credibility with senior executives, HRD practitioners are having to learn how to evaluate and report the real costs and benefits of their work. In advanced organizations, the HRD professionals who have mastered this skill have been given the leeway to pursue greater holistic development efforts. They have gained this permission by giving top management the confidence that HRD will be able to continuously support their organizations' goals and strategic activities. The technomancer's methods appeal to the cost-conscious group, and the holistic human developer's methods appeal to the executives that have come to view HRD as a way to unlock the competitive advantage of people growing and doing what they love. Either way, there are many new opportunities for human resource development professionals. Perhaps the best of both options will be open to skilled HRD practitioners who combine the two. The only way to fail will be to keep doing just what has always been done before.

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Current and Future Topics in Human Resource Development: Linking Research With Practitioner Needs

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Academics of any discipline are often accused of being out of touch by the practitioners of that discipline. While academics work to create knowledge that will improve practice, practitioners often view academics as abstract, theoretical, of little use in their world (Watkins, 1994). This distancing of academia from practice is generally enlarged when the discipline is experiencing rapid changes. The newly developing field of Human Resource Development (HRD) is currently undergoing such turbulent times (Nordquist, 1995; Rothwell & Kazanas, 1992). With this transformation comes a valuable opportunity and an urgent mandate for HRD to meet decisive business challenges (Yeung, 1994). There is significant debate as to what HRD of the future will look like (ASTD, 1994; Gilley & Coffern, 1994; Peery & Salem, 1993). The purpose of the study was to determine current and future research needs within the field of Human Resource Development. The expected outcome of this study was a closer link between academic research and practitioner needs and the building of a practical basis for future research studies within the field of HRD.

Academics need to conduct research that solves the urgent HRD problems of practitioners in organizations--useful research, which blends and optimizes the dual vantage points (Watkins, 1994). It is important to note that some academics fear that if research becomes involved in solving only particular business problems, insights will be relevant only to those particular settings and will not contribute to general knowledge (Senge, 1993). It is our concern that significant research opportunities may be missed due to the rapid changes associated with the relative newness and uncertainty of the HRD field.

The main task of this study was to identify "hot topics" in HRD both from the academic and practitioner viewpoints. Additionally, the study sought to identify both current topics and future topics. Two research questions guided this study :

1. *What HRD topics are currently being published and discussed?*
2. *What topics do HRD professionals believe need additional research to benefit the future of HRD?*

If research is carried out in a disjunct manner from actual practice, what level of impact or importance can it truly have to the field of HRD as a whole? Academics must be in tune with practitioner needs to design relevant and applicable studies (Jacobs, 1996). With our fast-paced and ever-changing society, it is becoming increasingly important that academics and practitioners learn to effectively and efficiently communicate ideas and concerns.

Method

Research Design A multiple method design was utilized which included four data collection methods. First, a systematic topic search in HRD academic and practitioner journals was performed to determine which HRD topics are currently being published. Next, a topic search in HRD-related conference proceedings was performed to further identify which HRD topics are being presented and discussed. Then, topics covered in several HRD-related listserves were tracked to identify areas that are currently being discussed by HRD professionals. Finally, these reviews provided the foundation for a survey of HRD professionals' opinions regarding topics in need of additional research to benefit the future of HRD.

Information Sources Because the research design of this study involved multiple methods, four different information sources were examined: journals, conference proceedings, listserves, and HRD professionals. Journals, conference proceedings and listserves were chosen as the most

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appropriate source to determine HRD topics that are currently being written about and discussed. HRD professionals were chosen as the primary information source to determine future research needs.

Journals. Journals were selected based on a study entitled "Answering the HRD Research Maze" which was conducted by Leach et. al. (1993). This study included refereed and non-refereed journals, as well as practitioner-focused journals. Two HRD professionals from the University of Illinois who have been in the field for many years and who read HRD journals regularly were chosen to review the journals listed in this study and asked to identify the most appropriate journals to review. This list included nine journals, as follows: Journal of Adult Education, HRD Quarterly, New Directions in Adult and Continuing Education, Journal of Vocational Education Research, Journal of Continuing and Higher Education, Performance Improvement Quarterly, International Journal of Education Research, Training & Development Journal, and Training Magazine. A table of contents and an abstract of every article published between January 1, 1993 and September 30, 1995 by each of the nine journals was acquired from the University of Illinois library database.

Conference Proceedings. The proceedings from the 1995 and 1996 conferences of three major HRD-related professional associations were reviewed. The three associations were: the American Society for Training and Development (ASTD), the Academy of Human Resources Development (AHRD) and the International Society for Performance Improvement (ISPI).

Listserves. Topics covered by active participants in three HRD-related listserves were tracked for a 25 working day period. The listserves included TRDEV-L (Training and Development), HRD-L (Human Resource Development), and VOCNET (Vocational Education). TRDEV-L was reviewed from November 6, 1995 to December 8, 1995. HRD-L was reviewed from November 30, 1995 to January 5, 1996. VOCNET was reviewed from December 4, 1995 to December 21, 1995 and January 4, 1996 to January 22, 1996.

HRD Professionals. The population of the survey was defined as HRD professionals, both academics and practitioners, working in the field. A list of all current TRDEV-L listserve subscribers as of February 7, 1996, was obtained to determine the opinions of HRD professionals in regard to future trends. TRDEV-L appears to be the most active HRD related listserve in terms of the number of messages per day and the number of overall subscribers. Subscribers are primarily people interested in "... a forum for the exchange of information on the training and the development of human resources (Lin , 1996).

Instrumentation Content analysis matrices and a questionnaire were used as data collection instruments in this study. The matrices were developed to record topics identified in journals, conference proceedings, and listserves. The structure for the matrices was the same across the three information sources. The combination of topics identified through the resulting three matrices served as the basis for designing the questionnaire used to survey HRD professionals about their expectations of future HRD research needs.

Content Analysis Matrices. The matrix for journals consisted of the journal titles listed across the X-axis. Initially, the Y-axis contained no information. However, as new topics were identified through the journal article review, they were added to the Y-axis. The journal matrix provided a basic framework for organizing data collected from the remaining information sources. The matrix for the conference proceedings listed each conference by association and year on the X-axis and the topics identified through the journal review on the Y-axis. As topics unique to conference proceedings were identified, they were added to the Y-axis.

Survey Questionnaire. A questionnaire to survey HRD professionals was developed based on the topics listed in the journal, conference proceeding, and listserve review matrices. This questionnaire included a brief introduction to the study, as well as explicit instructions for completing the instrument. Following the instruction section, the questionnaire included a categorical listing of topics based on the matrices established through the journal, conference proceeding, and listserve reviews. The four primary categories that topics were assigned to included: learning topics, instruction topics, organizational topics and topics related to the general field of HRD. Respondents were asked to mark all topics or add any topics they felt needed further research in the next five years. The instrument was pilot-tested on 30 randomly selected TRDEV-L listserve subscribers, who were not included in data collection. Changes based on the pilot-tests were made to the instrument prior to final electronic mailing.

Data Collection Data collection was conducted through two major steps: 1) coding of journals, listserves and conference proceedings, and 2) a survey of HRD professionals. Journals

were reviewed first because they were expected to provide the greatest breadth of topics; thus, establishing the broadest framework for the matrices used in collecting conference proceedings and listserve data. The two primary researchers involved in this study were responsible for assigning all topical codes to journal articles, listserves and conference proceedings.

Coding Procedure for Journals, Conferences and Listserves. The first five journals were analyzed simultaneously by the researchers to reach consensus on the scope, meaning and code of each topic. The remaining four journals, listserve printouts and conference proceedings were coded independently by each researcher. Each item (i.e., journal article, conference proceeding or listserve message) was read and content analyzed to determine its primary focus. Many items contained specific descriptors that helped to determine the topic(s) covered.

Article abstracts contained subjects descriptors used to classify the article in the library database. These descriptors were helpful in identifying the primary topic of the article. Similarly, AHRD and ASTD conference presentations, activities, and workshops contained topic descriptors to help conference attendees select desired activities. ISPI conference proceedings did not contain such organizers. Listserve printouts contained a subject header at the top of each message that helped to identify the primary topic(s) covered by the author.

Inter-rater reliability for the coding process was determined by having two researchers analyze and code 200 items contained in the 1995 AHRD conference proceedings. One researcher assigned a total of 234 topic codes, while the other researcher assigned a total of 236 topic codes. This resulted in 16 overall discrepancies. Therefore, inter-rater reliability was found to be at 93% (16 discrepancies / 236 topic codes) using the above described coding process.

Survey of HRD Professionals. The survey portion of this searched for perceptions of academics and practitioners about future HRD research needs. A questionnaire was designed based on the categories and topics identified through the first part of this study. Respondents were asked through this internet distributed survey instruments to mark all topics they felt needed further research over the next five years. An "other" section was included that allowed participants to add any topics they felt were missing. Respondents were also asked to mark their status as either employed by an organization, independent consultant, academic, student, or other. The questionnaire was sent via e-mail to each of the 2755 TRDEV-L listserve subscribers between February 13 and February 15,1996. Respondent e-mail addresses were clustered into groups of five to seven to make the questionnaire seem more personalized; thereby, increasing the response rate. As an incentive to complete the questionnaire, respondents were promised an executive summary of the results.

Data Analysis Data analysis was conducted through four steps. First, topics identified through the journal review were placed into four categories according to common themes. Second, frequencies were computed for each topic. Third, topics and categories were ranked by frequency for each information source. Lastly, rankings for each information source were correlated.

Categorization of Topics. The journal review matrix was analyzed to identify common themes that emerged from the identified topics. These common themes served as category headings to provide a logical structure for arranging the topics. Four category headings were identified: learning-related topics, instructional topics, organizational topics, and topics related to the field of Human Resource Development. Learning-related topics specifically addressed learner needs or learner characteristics. Instruction-related topics were more relevant to the instructor's needs and responsibilities. Organizational topics dealt with topics and issues facing the whole organization, which HRD must support. The Field of HRD category included topics specific to the HRD function as a discipline and not necessarily organizational wide issues. This categorical outline served as the structure for analyzing the remaining information sources.

Frequency Distribution of Topics. A frequency was computed for each topic identified in the journal review based on how many times that topic was listed in each journal. This total was then entered into the journal review matrix under the appropriate journal title and topic name. An aggregate frequency for each topic was computed by adding up the totals for individual journals from the matrix. This aggregate frequency was then divided by the sum total of topics identified through the journal article review and multiplied by 100 resulting in the percent of total for each topic. Finally, the percent of total for each category heading was determined by adding up the percent of total of the topics within that category. This same frequency distribution procedure was then used to analyze to conference, listserve, and survey data; however, the topical frequencies for survey data were further broken down into two categories: academic and practitioner.

Ranking of Topics. Within each information source, topics were ranked in order from highest to lowest frequency. The data coding procedure resulted in 43 major HRD-related topics emerging from the first three information sources. Thus, topics were ranked in order of importance from 1 to 43 based on highest frequency. Topics with the same frequency - ties - were handled by averaging the rank of the tied topics and assigning this average to all of the tied topics in question. Categories were ranked by averaging the ranks of all topics contained within each category heading. The category containing the topics with the lowest average rank was ranked first.

Cross-source Relationships. An analysis of journal reviews, listserve activity, and conference proceedings was conducted to determine the consistency among information sources used to determine current 'hot' topics. The extent of agreement on the ranking of topics among current information sources was measured by generating a Spearman Rank Correlation Coefficient for each relationship. The relationship between academic and practitioner rankings was explored to determine the extent of agreement between the two groups on future research needs.

Findings

The analysis resulted in the emergence of 43 HRD-related topics. To determine the topics currently being published and discussed, 4028 codes were assigned through the review of journal articles, conference proceedings, and listserve discussions. Furthermore, through the survey of HRD professionals, 311 individuals provided 6246 responses indicating which of the 43 topics needed the most future research. The data are presented with respect to the two major research questions of this study.

Research Question #1: What HRD Topics are Currently Being Discussed and Published?

Journal articles, conference proceedings and listserve discussions served as the three primary information sources to address this research question. In all, 1144 journal articles were examined and assigned 1446 topic codes, 1198 conference presentations were assigned 1434 topic codes and 958 individuals contributed listserve messages resulting in 1148 topic codes. Approximately, 5% of all topics resulted from unclear *items* that needed to be examined jointly by the researchers in order to assign the proper codes. Organizational topics were considered most important based on the average rank of the categories across the three information sources (see Table 1). In particular, journal and conference reviews resulted in organizational topics ranking the highest, while the listserve review showed organizational topics as the second highest ranked category. Overall, the average ranking of categories showed instructional topics top be the second most important category with topics related to learning and the field of HRD ranking equally and lowest. There was little agreement among sources as to the ranking of instructional topics; although, there was general agreement that topics related to the general field of HRD ranked lowest.

Learning. The learning category contained eight topics and was the smallest of the categories in this study. A greater number of journal articles contained learning-related topics making up 15.91% of the total topics, in contrast to conference proceedings and listserves wherein only 9.90% of the proceedings and 9.71% of the listserve discussions contained learning-related topics. Correspondingly, the average rank of topics covered in the journal article review was 20.19. Again, this differed from listserve (26.44) conference and proceeding (27.25) average ranks. The top three learning-related topics based on the average rank of the three information sources are: Cognitive Processes of Learners, Assessing Learner Characteristics and Experiential Learning.

Table 1. Average Ranking of Categories by Information Source

Category	Journals, Conferences & Listserves	Survey Results
Learning	3.33	1.5
Instruction	2.00	1.5
Organizational Topics	1.33	3
Field of HRD	3.33	4

Instruction. The instruction category consisted of ten topics. Listserve reviews reflected the greatest activity with 36.74% of listserve discussions containing instructional topics. In contrast, instructional topics covered in conference presentations and journal articles only made up 31.24% and 28.49% of the total topics, respectively. The top three topics contained in the instruction category are: Instructional Technologies, Instructional Techniques and Instructional Design.

Organizational Topics. The organizational topics category consisted of eleven topics. More journal articles (32.64%) and conferences presentations (34.24%) contained organization-specific HRD topics than listserves wherein only 21.92% of discussions reviewed contained organizational topics. Correspondingly, the average ranking of listserve organizational topics was lower at 21.32 than journal articles (17.95) and conference presentations (16.27). The top three organizational topics are: Team Development, Linking HRD to Strategy, and Diversity.

Field of HRD. The category of topics related to the field of HRD consisted of 14 topics and was thereby the largest category of our study. Although this category contained the most topics, it was not highest ranked category of our study (see Table 1). A portion, 26.51%, of listserve discussions contained references to topics in the field of HRD, which is more than conference proceedings (23.50%) and journal articles (21.44%) (see Table 5). Correspondingly, the average ranking of field of HRD topics covered in the listserve review is 22.43, which is higher than conferences (25.68) and journals (26.68). The top three topics related to the field of HRD are: International HRD Issues, Management Development Programs, and Career Development Issues.

Source Comparisons The three information sources were similar in the importance placed on the top ranked topics currently being published and discussed. A Spearman Rank Correlation was conducted on the topical rankings of the three sources to determine the extent of agreement between the three sources. These strong correlations indicate overall agreement between information sources addressing what is currently being published and discussed.

Research Question #2: What Topics do HRD Professionals Believe need Additional Research to Benefit the Future of HRD?

A survey of training and development professionals served as the primary information source for this research question. Responses from TRDEV-L subscribers were received over a two week period from February 13, 1996 to March 30, 1996. A return rate of 11.29% resulted from 311 returned instruments. Of these 311 respondents, 243 persons (78.14%) indicated that they were practitioners. These 243 individuals provided 4905 responses as to which HRD topics they felt are going to be most important over the next 5 years resulting in an average of 20.19 responses per individual. The remaining 68 respondents (21.86%) indicated that their primary position was academic in nature. These 68 individuals provided 1341 responses resulting in an average of 19.72 responses per academic .

Table 2. Ten Highest Ranked Topics according to Research Questions

Research Question #1: What HRD topics are currently being published and discussed?		Research Question #2: What topics do HRD professionals believe need additional research to benefit the future of HRD?	
Instructional Technologies	1	Self-directed Learning	1
Instructional Techniques	2	Training Transfer	2
Instructional Design	3	Distance Education	3
Team Development	4	**Instructional Technologies**	4
Linking HRD to Strategy	5	Learner/Performance Assessmnt	5
Diversity	6	**Linking HRD to Strategy**	6
International HRD Issues	7	Learning Organizations	7
Cognitive Processes of Learners	8	HRD Return on Investment	8
Management Development Programs	9	Mentoring	9
Organizational Development	10	Experiential Learning	10

Based on the average rank of topics within each category, practitioners indicated that instruction-related topics were slightly more important to the future of HRD than learning-related topics. Organizational topics followed with topics related to the field of HRD ranking the lowest. Academics felt that topics related to learning were most important based on the average rank of each topic within each category. Instruction-related topics followed fairly closely in second with organizational topics and topics related to the field of HRD being ranked much lower. Overall, learning and instruction related topics were ranked considerably higher by both groups than either of the other categorical topics.

Learning. At 24.03% of the total responses, a slightly greater proportion of academic responses indicated that learning-related topics were important to the future of HRD than practitioner responses which accounted for 22.70% of total responses. Correspondingly, the average rank of academics responses was slightly higher at 12.63 compared to the average rank of 14.88 of practitioner responses. The top three topics for both groups were the same, although they ranked differently on the overall 43 topic ranking scale. The top three learning topics are: Self-Directed Learning, Training Transfer, and Experiential Learning.

Instruction. Approximately the same proportion of responses were assigned to the instruction category by practitioners (28.04%) and academics (27.47%) (see Table 9). There was also not much difference in the average rank of topics within this category with practitioner responses averaging 14.85 and academics averaging 15.75. The highest ranked topics were not identical across practitioners and academics; however, there was agreement as to what the top four topics of the future should be. The top four topics related to future research needs of instruction are: Distance Education, Instructional Technologies, Learner/Performance Assessment, and Mentoring.

Organizational Topics. A similar percentage of responses were assigned to the organizational topics category by practitioners (23.87%) and academics (23.75%). The average rank of topics within this category was similar, as well - practitioners (23.68) and academics (23.82). However, there was little agreement as to the highest ranked topics in this category. Overall, the top two organizational topics needing future research are: Linking HRD to Strategy and Learning Organizations.

Field of HRD. A similar percentage of responses were assigned to the Field of HRD category with practitioner responses resulting in 25.39% and academic responses resulting in 24.75% of total responses for each group. Average ranking topics was also similar at 29.86 for practitioners and 30.39 for academics. There was limited agreement as to the highest ranked topics within the field of HRD category. Practitioners and academics agreed that "HRD Return on Investment" was the highest ranked topic within this category.

Cross-source Comparison. Academics and practitioners were very similar in their perceptions of the most important topics in the future of the HRD field. A Spearman Rank Correlation was run to ascertain the extent of (dis)agreement in topical rankings between these two groups. The Spearman Rank Coefficient was found to be r=0.8596 indicating a fairly strong extent of agreement between the rankings of academics and practitioners.

Discussion

The findings of this study suggest several discussion areas: extent of agreement within research questions; current and future HRD perspectives; and future 'hot' topics within HRD.

Extent of Agreement within Research Questions A strong extent of agreement exists among the three information sources addressing HRD topics currently being published and discussed. This strong extent of agreement could arise from similarity among the types of people publishing journal articles, arranging conferences, and taking part in listserve discussions. There may be a cycle that occurs where what people read, is what people tend to present, which may also be what people are inclined to discuss. However, this strong extent of agreement may actually appear because the topics identified are truly those which HRD professionals currently need to know about in order to effectively perform their jobs.

The Spearman correlation coefficient relating academic and practitioner rankings was found to be at r=.86, suggesting that HRD professionals are in close agreement as to which topics need more research over the next five years to benefit the field of HRD. This runs contrary to what one might expect to be an outcome of this study; that academic and practitioners would *not* be in

agreement on future HRD research needs because of the turbulent nature of this rapidly changing field.

The findings show almost no correlation between the three current information sources and the survey addressing future research needs. The near zero correlations found between journals/listserves, and HRD professionals indicates that HRD topics currently being published and discussed are very different from HRD research needs of the future.

Current and Future HRD Perspectives HRD topics specifically related to organizational-wide concerns are *currently* those being published and discussed most often. This seems logical as many organizations have experienced drastic reorganization and change in the 1990's.

Organizations of the future will most likely continue to reorganize and restructure to meet changing market conditions (Nolan & Crosan, 1995; Kanter, et. al., 1992). Like other support functions, HRD has had to embrace, manage, and sustain these changes. However, organizational topics are not what HRD professionals see as the primary focus for the future of HRD research.

The findings indicate that topics related to learning and instruction will be the most important HRD topics for *future* research over the next five years. This shift in focus from organizational topics to learning and instruction-related topics may stem from the fact that as changes and reorganization have occurred, organizations have recognized the tremendous impact such transformations have on employees. Now more than ever organizations are realizing that to survive and remain competitive, they need to change their focus toward employee development needs. The predicted emphasis on additional research for learning and instruction-related topics suggests that HRD professionals have recognized the need to refocus HRD activities on employee needs by providing high-quality, learner-focused instruction.

Table 2, which compares the ten highest ranked topics according to research question, indicates a notable difference between the most important HRD topics that are currently being published and discussed and the most important HRD topics requiring research in the future. While the top three topics currently being published and discussed are related to instruction, 4 of the remaining top 10 are organizational topics. These rankings also suggest a strong HRD focus toward instruction and learning, but indicate that HRD activities being published and discussed are strongly influenced by organizational problems. In contrast, seven of the top 10 "hot" topics needing future research will be instruction or learning-focused, while only 2 are organizational topics. Thus, learning and instructional topics are growing in importance within the field. In particular, self-directed learning, training transfer, and distance education were ranked relatively low when looking at current information sources; however, HRD professionals indicated a strong need to focus research on these topics in the future.

Future 'Hot' Topics in HRD The ten "hot" are included in table 2. Both academics and practitioners alike marked these topics as being the most important topics to research over the next five years

Instructional Technologies is the only instruction/learning topic listed in both top 10 rankings. This indicates the growing importance of this newly emerging topic within the field HRD. Technology is changing the way business is being conducted worldwide, and HRD is not immune to such changes. While information is currently being published and discussed about instructional technologies, more research will need to be conducted before this topic is fully understood and effectively utilized.

Another topic that is currently seen as important and that will continue to be important for future research is Linking HRD to Strategy; thus, indicating that HRD will continue to require close relationships with other functional areas to stay abreast of business strategy. In fact, HRD must stay closely attuned to organizational changes in the future to become and remain a strategic partner in business (Rothwell & Kazanas, 1994).

The topics targeted at addressing future research needs may indicate that in the future HRD should: allow employees to take a greater part in developing themselves on the job, provide systems for continuous learning, ensure that training effectively transfers to the job, make a variety of training mediums available to learners, and stay closely linked to business strategy.

Implications What impact will these findings have on the field of HRD and HRD professionals? Three area that are potentially affected by this study are: designing research, sharing research, and developing new ways of communicating research. As a result of this study researchers, journal editors, and conference coordinators, are provided a strong foundation for designing future research. Authors, conference coordinators, listserve managers, and organizations

are provided a picture of the important topics they need to address in the future. Ultimately, these groups must share the research that is conducted on the "hot" topics uncovered in this study in order to positively influence how all HRD professionals perform their jobs in the future. This sharing of information will undeniably have positive effects on the field of HRD as well. Not only will designing and sharing research be important, but also new ways of communicating may be drawn from the study. As HRD professionals discover new communication media, they will inevitably find more advanced ways to use these media, such as listserves and the World Wide Web, to design, conduct, and ultimately communicate research findings, ideas, and concerns.

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Re-searching Human Resource Development: Societal Functions of Training and Education

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The globalization of work and more recent advances in the soft and hard sciences are changing the role of human resource development (HRD). Those involved in training and development know that the emerging linkages between vocational education and human resource development offer opportunity to re-construct our view of and approach to these complementary communities of practice. As the societal institution responsible for the provision of leading activities, the Academy must re-think its view of human and organizational development and respond accordingly.

In the early 1980's, the Government of Saskatchewan provided funding for the creation of a Vocational/Technical Education degree program at the University of Regina, Regina, Saskatchewan, Canada. The *voc/tech* program was established to provide professional development opportunities and degrees for instructors employed in the province's publicly-funded community colleges and technical institutes. The initial participation profile showed that college and institute personnel comprised some 80% of the enrolment and professionals employed in various community-based and business and industry human resource development (HRD) functions comprised the remaining 20%.

By 1995, the participant profile had undergone a marked shift as the college and institute participation rate was approaching 20% and the participation rate for members of other HRD communities of practice had shifted to the 80% category. The new majority of participants were employed in training and development roles in police agencies, municipal fire service, community-based adult education organizations, public health agencies, financial institutions, oil refineries, public utilities, and other private and public sector communities of practice. Whenever they discussed their choice of voc/tech as a degree option, many of these new participants shared a view that they had enrolled in the degree simply because it was the best fit the university offered for HR practitioners. The conversation typically ended with participants saying: "People in business and industry don't see vocational/technical education as being applicable to the field of human resource development, and employers don't connect voc/tech with HR when they are hiring or promoting people. Why don't you offer a degree that would better serve the needs that are out there? You would get more participation and the university would have a relevant program for HR people who are dealing with the changing nature of work".

Concurrent with these winds of change, faculty members had been monitoring emerging trends in the field of human resource development (e.g. Kaeter, 1995; Leitzel & Vogler, 1995), especially as they relate to vocational/technical education (e.g. Holton & Trott, 1996). The faculty also recognized that in this socio-historical time, when workplaces are embedded in a knowledge-age economy, those responsible for the provision of activities that lead human resource development are faced with unprecedented challenges and opportunities, especially in the field of adult vocational education. To capture these opportunities, however, researchers and educators involved in any re-design initiative must respond to the call for a more robust view of how occupational competence is developed, and the role of training and education in leading it (e.g. Barnet & Cavanagh, 1994; Davidow & Malone, 1992; Hecksher & Donnellon, 1994; Johansen & Swigart, 1994; Nonaka & Takeuchi, 1995). In the Fall-Winter of 1995, the Department of Vocational/Technical Education submitted a proposal to the Faculty of Education to re-visit the currency of its graduate and undergraduate programs.

The key thrusts of the project were to establish a steering committee of senior business and industry HR professionals to guide the field research aspects of the project, to recruit a research assistant,

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and to secure participation from the Faculty of Administration. The latter step was seen as essential as turf wars tend to emerge when Faculties perceive that their traditional hold on certain aspects of the Academy are under siege. Recognizing that there were distinct, but not separate, linkages between the mandates of the Faculty of Education and the Faculty of Administration in terms of human resource development vs. human resource management, it was felt that there was merit in having both Faculties involved in researching, developing, and delivering the new degree/s. To facilitate the process, members from the Faculty of Administration's graduate program office and the Faculty of Education's business education teacher education stream agreed to join the project team. The research assistant was hired and the project was underway by March, 1996, under the direction of the Department of Vocational/Technical Education.

Research Questions

The key questions for this research were the following:

1. How should adult vocational educators and their communities of practice respond to emerging trends in human resource development?
2. What is the function of, and the relationship between, official training, which is generally understood as being provided by the training department, and organic training, which is generally understood as being provided by competent pracitioners on-the-job? What is the connection between official and organic training? And how can organizations which are involved in the development of human resources better understand the functioning of official and organic training and re-shape their practice to include both streams in their overall approach to human resource development?
3. What is the relationship between the following two processes: 1. The development of knowledge-ability in a community of practice through the acquisition of fundamental skills and sensitivities and learning to understand them through reflection in various societal settings other than education; and, 2. the development of knowledge-ability in a community of practice through the acquisition of conceptual tools for reflection and learning to more fully understand a community's practice through reflection in the education setting?

A fundamental assumption under which we have been operating is that all development is preceded by the provision of leading activities initially provided by organic and official trainers, and subsequently provided by educators in the ongoing processes of re-producing an organization's practice and its membership; in other words, nurturing human resource development through vocational training and education.

Methodology

The research methodology was based on two primary assumptions and comprised four key research initiatives. The two assumptions were: 1. That adult vocational education has an opportunity for re-newel through the field of human resource development; and, 2. that the development of occupational competence is a two-tiered process that subsumes the acquisition of skills as the primary process and learning through reflection in order to gain an understanding as an ancillary, but complementary, process. The four key initiatives were: 1. A series of focus group sessions of HR practitioners in the City of Regina were held to solicit input into the programs' framework and course content; 2. a literature search was carried out into emerging trends in training and development, especially between HRD and voc/tech; 3. interviews were held with senior HR persons in a number of Canadian universities and corporations to research current trends in Canada's HR communities of practice; and, 4. a search for a theoretical underpinning for the new program was conducted. The curriculum re-construction project's overarching aim was to develop a re-newed program that would more adequately reflect the changing role of vocational/technical educators in the university milieu, particularly in terms of the emerging linkages between vocational/technical education and human resource development (e.g. Holton & Trott, 1996).

Based on an assumption that both fields were inextricably linked, the research team established two key objectives: 1. To re-construct the voc/tech curriculum in the form of undergraduate and graduate

programs having an HRD focus; and, 2. to identify and instantiate a view of development which would serve as the theoretical underpinning for the re-constructed programs. The latter objective was seen as critical to the success of the project because the team wanted to emerge with both an appropriate program framework and a theoretical/philosophical underpinning which would serve to guide the development of the program and its core courses. To use a building construction metaphor, we wanted to have a sound footing which would support the rest of the program's foundations. Another intent was that the theoretical underpinning would better reflect the development process as it occurs in the day-to-day work of HR professionals and in the communities of practice served by the Department of Vocational/Technical Education.

After an initial research of the literature, we decided to focus on recent advances in cultural psychology, particularly in the situated activity stream, with a view to adopting it as the theoretical approach to program re-development. The methodology employed for a theoretical underpinning for the program was that of a conceptual analysis through literature review and grounded theory, and the research team has been analysing and extracting key concepts and themes from current research and literature in the field of human resource development. To date, the focus group field research is completed, the literature research into linkages between voc/tech and HR trends is complete, research into trends in the Canadian HR environment is near completion, and the team is still in the process of instantiating the theoretical framework. It is to this last aim that the remainder of this paper is directed.

The Search for a Theoretical Underpinning

New understandings of the relationship between theory and practice have emerged to alter our notion of development and how it is nurtured. Conventional approaches to training and education, as they relate to the development of occupational competence, tend to be founded on views of development that emphasize learning as a primary process which is supported by training and education processes that focus on learning; however, much of the learning theory employed in the design and delivery of training and education programs and services is under critique as a result of recent advances in the fields of critical sociology (Luhmann, 1995; Habermas 1984, 1987), cultural psychology (Bruner, 1990, 1996; Chaiklin & Lave, 1993; Cole, 1996; Gee, 1992; Lave & Wenger, 1991; Wertsch, 1985, 1991; Wertsch, del Rio, & Alverez, 1995), human evolution (Eder, 1996), neurobiology (Edelman, 1989), organizational development (Barnet & Cavanagh, 1994; Davidow & Malone 1992; Heckscher & Donnellon, 1994; Johansen & Swigart, 1994; Nonaka & Takeuchi, 1995), semiotics (Bakhtin, 1981) and sociolinguistics (Gee, 1992). These researches support new understandings and serve as bases for recasting views of human development, approaches to human resource development, and related roles of training and education associated with the aims of this research project.

Given the Department of Vocational/Technical Education's goal of identifying a sound *footing* for its new program, the focus of this project research activity has been on the construction and instantiation of a conceptual scheme for the identification and classification of structures and processes for human resource development. As noted, the scheme is grounded in the notion of situated activity, a stream of cultural psychology concerned with the study of societally significant activities that incorporates findings drawn from activity theory, critical psychology, ecological psychology, cognitive anthropology, and ethnomethodologies that are congruent with the foregoing fields of study (Chaiklin & Lave, 1993). The scheme is meant to capture how these theoretical underpinnings can be utilized as a basis for connecting training and education activities that contribute to the process of human resource development at societal, institutional, organizational, and departmental levels.

Based on our work to date, the following overviews our re-search into situated activity and the potential it holds for linking the fields and re-shaping our view of vocational/technical education and human resource development. Initially we portray the scheme in terms of the nature of the development of occupational competence according to advances in the physical and social sciences and the humanities. Then we explore processes, structures, and outcomes for training and education at the societal, institutional, organizational, and departmental levels. Next we comment on implications for contributions by training and education to organizations' human resource development endeavours, and finally on our progress in instantiating the scheme for use by the department of Vocational/Technical Education.

The Nature of Development

The development of occupational competence is seen to be a two-tiered process of originally acquiring fundamental or advanced skills and sensitivities, and subsequently learning to understand them through reflection in what can be viewed as an iterative action/reflection rhythm. In this process of development, practice and theory are thought to, over time, mutually modify each other, and intertwine and produce a new emergent. In contrast to the conventional view of developing competence where theory precedes and drives practice, theory on this view is seen as a tool to reflect on practice after the fact, in search of more efficient and effective practice, and all development is seen to be preceded by instruction in the form of the provision of leading activities. On this non-conventional view of development, acquisition is seen as a process of acquiring skills and sensitivities subconsciously by exposure to models and a process of trial and error, without a process of formal teaching. Learning, on the other hand, is, as Gee (1989) advocates, a process of consciously reflecting upon practice in the context of leading activities provided by an instructor, or through solitary reflection, in search of understanding for instrumental purposes or problem-solving, and metaknowledge for purposes of critique, or problem-finding. Our aim in this research initiative was to, as Knodt (1995) suggests, exit with a theoretical footing which serves to inform us about what we are already doing; in our case, to develop an incipient metanarrative for what we have been practising in the Academy.

Wertsch's (1985, 1991) reconstruction of Vygotsky's view of development was identified as a basis for re-newing the program's educational processes, structures and outcomes. On this view, the structure in which the process of acquisition occurs, referred to as the work site for development, is a psycho-social space within which employees enact the practice of a department. The structure in which the process of learning occurs, referred to as the formal site for development, is a psycho-social space within which employees engage in learning by reflecting on their experiences in the work site, in search of understanding. The development of the organization and its members is thought to be enhanced by their being able to freely migrate back and forth between these sites for development, and the provision of activities --instruction-- that lead the development of occupational competence in them. Instruction within these sites for development can take the form of either training within an organization embedded in a societal institution other than education, such as business and industry, the military, health, and government. Instruction can also take the form of education within a school situated within the education societal institution. In the former situation, skills, sensitivities and understanding are oriented toward organizational efficiency and problem-solving. In the latter situation, work and formal sites serve for the acquisition of conceptual tools for reflection oriented to understanding effectiveness from an institutional and societal standpoint and a problem-finding perspective.

Leading on from the views of Gee and Wertsch, Lave and Wenger (1991) advanced a view of development that holds significant merit for the aims of this research. These researchers propose that instruction, in the form of training, is carried out by old-timers who are referred to as full members of a department or community of practice, and by newcomers who are referred to as legitimate peripheral members, enacting a configuration of social roles--*status subordinate*, *learning practitioner*, *sole responsible agent for a "minor" part of the performance*, and *aspiring expert*--that are embedded organically in the day-to-day practice of departments within an organization. Official training is also provided by old-timers in more contrived, official formal sites for development situated either within the organization or in other organizations embedded in a societal institution other than education. From this perspective, trainers are primarily concerned with the provision of activities that lead the acquisition of skills and sensitivities and instrumental understanding --procedural transparency.

From earlier research by Wenger (1990) and later research by Luhmann (1995) it can be seen that instruction, in the form of education, is carried out by full members of communities of practice situated in schools. This proposition was seen to be relevant to our search in that, in the work site, educators nurture the acquisition of conceptual tools by members of organizations embedded in societal institutions who attend educational programs and enact the social role of student. In the formal site for development within the education societal setting, attendees use these conceptual tools acquired in the work site to critique the practice of their respective departments in search of understanding oriented to organizational, institutional, and societal interfaces and effectiveness that makes the implicit cultural beliefs and mores more transparent--cultural transparency.

In his conception of development, Habermas (1984) noted that four forms of human rationality are thought to have evolved over the course of some fifty million years of primate development: The four forms, which Habermas sees as important for gaining an understanding of human development, include somatic intelligence, narrative intelligence, scientific intelligence, and linguistic intelligence. Somatic intelligence is a primordial form of rationality grounded in physiognomic logic that promotes the wellbeing of the species. Referred to as *affect*, it has genetic priority in the development of forms of human intelligence. The affect serves as a primary signalling system and the biological substrate for later to follow forms of rationality, referred to as *intellect*. Somatic intelligence is a prime force operating in work sites for development (Luhmann, 1995).

Narrative intelligence came into being as recently as fifty thousand years ago as part of the early development of human primates when the emergence of language made sensemaking possible in the form of stories grounded in informal logic. In the mid-seventeenth century, scientific intelligence emerged, making possible sense-making in the form of explanation, prediction and control grounded in formal logic and statistics. By the late twentieth century, linguistic intelligence had emerged in the form of an interrogation of language grounded in a combination of formal, informal, and nonformal logics that make it possible to describe our descriptions of reality for purposes of assessing imbalances between the forms of rationality employed and to explicate meaning. These latter three forms of human rationality, or intellect, are the prime forces operating in formal sites for development.

Institutional, Organizational and Departmental Structures, Processes, and Outcomes

Societal institutions, such as business and industry, government, health, the military, and the organizations within them are impelled by imperatives and initiatives that are conceived from on-high, as theory, and actualized on-the-ground, as practice. In order to endure and to prosper, institutions and organizations must maintain the status quo through making procedures more transparent as part of the quest for, and the cost of, efficiency, while, at the same time, transforming the status quo by making cultural ideologies more transparent in a quest for societal and institutional effectiveness. The basic means for accomplishing these societal functions is to continually re-produce the practice and membership of departments that populate organizations (Habermas, 1984, 1987; Wenger 1990). This concept was seen as central to the Department of Vocational/Technical Education's search in that the training and education dynamics of human resource development constitute major factors in the re-production of institutions, organizations, and departments.

In our review of the societal functions of maintaining the status quo while simultaneously transforming it, we decided to employ Wenger's (1990) notion of a department of an organization as a community of practice. We were interested in exploring the community's development and that of its members as it occurs as part and parcel of the re-production of the community's interwoven practice and membership. We were also interested in the relations of a department's members with other departments inside and outside the organization and the societal institution within which they are situated (Wertsch, 1985). Following is an overview of our work to date on this theme and our sense of how the notion of a community of practice fits our program's re-construction and how it can serve in the re-construction of vocational education by connecting it to human resource development.

Reproducing the Practice

Full members of an organization maintain its practice by juryrigging snags that inevitably crop up in the course of its day-to-day activities and capitalizing this trial-and-error pragmatic development that emanates from dealing with the endless exigencies that present themselves in everyday life. Sometimes the persistent problems are dealt with through more formal, *official* training processes by the training department. In most instances, however, development occurs informally as certain old-timers subtly, implicitly, and all but unconsciously provide activities that lead their peers through a process of *organic* training which fosters continuing quantitative change--procedural transparency.

Development also occurs as certain members of a community of practice gain incoherent membership in other communities by aligning, affining and affiliating themselves with those that are

ideologically incongruent with their own (Wenger 1990). A member's incoherent membership in these communities brings to bear perspectives that, when mediated, qualitatively alter the practice and foster cultural transparency within their own community of practice and serve as another form of organic training. On occasion, experts from other communities are invited to serve the purpose of official training focused on enhancing procedural transparency, or for purposes of education focused on enhancing cultural transparency.

Reproducing the Membership

As full participants in a community reproduce its practice through engagement in everyday activities, they simultaneously induct and socialize legitimate peripheral members and hence maintain the status quo by replacing full participants that leave. During this organic training process, given the different sociohistorical legacies of experience of newcomers, certain newcomers bring to the fore perspectives gained from previous full and current incoherent membership in communities that are often ideologically incongruent with their own. When these ideological differences are mediated, they become a potentially prolific source of cultural transparency. Here we see the critical impact of the contra-side of organic training upon corporate and personal development. From this point in the research we turned our attention to how those responsible for human resource development endeavours can focus them toward the fulfilment of societal, institutional, organizational, and departmental functions of preserving the status quo while at the same time superseding it with a new and more complex form, especially in re-newing and theorizing our view of vocational education.

Implications for Trainers and Educators

Societal institutional imperatives developed from on-high are reified and communicated to organizations within an institution. In turn, these organizations ideally formulate initiatives that address aspects of the imperatives which, when communicated to other departments within the organization, become normative structures which have been reified for purposes of efficient focus. The necessary tension which arises between the imperatives and initiatives which are conceived and reified from on-high and enacted on-the-ground, is, when mediated, thought to be a pivotal dynamic in the process of societal, institutional, organizational, and departmental development (Habermas, 1984, 1987; Wenger, 1990; Wertsch 1985). The processes and structures of training and education associated with this view of development can serve chief executive officers and managers of human resource development to assess organizations' human resource development endeavours. As a view that is footed in the social construction of knowledge theory that is so germane to organizations operating in knowledge-age economies, it can also serve to inform those responsible for human resource development departments that design and implement training and education activities.

The notions of sites for development, organic and official training and education, and the different forms of human intelligence can be enhanced when linked with the ideas of full, legitimate, and incoherent forms of membership in communities of practice. The linkages make it possible to import and export knowledge between departments, organizations and institutions, and they cast a more robust and en-lightened view of how we can nurture the knowledge-production process and re-new our view of and approach to vocational education.

Given the Academy's concern with producing a global view of development and practitioners' interest in re-producing their own view through exposure to the Academy, our research has led to the following critical dimensions for planning, implementing and assessing human resource development within an organization:

- *robustness of the view of development underpinning a program* Does the view reflect the most recent developments in the social and human sciences, and is the executive group of labour and management behind it?
- *index of incoherent membership* Is there sufficient connection between departments or communities of practice within and without the organization to provide a base for this approach to training and education?

- *quality of organic training* Is there a sufficient corps of old-timers that possess the fascination with their craft and associated commitment to socialize newcomers?
- *quality of official training* Is the training department open to reconstructing the conventional view of development and the training and education associated with it?
- *quality of education and linkage with training* Does quality exist, and does potential exist for partnerships between education and training communities of practice and host organizations?
- *utilization of cyberspace technologies* Is cyberspace virtuosity feasible and available?

The research reported in this paper will be treated in more depth in *A Conceptual Scheme for the Identification* and *Classification of Structures and Processes for Human Resource Development* which are currently under validation through an ethnographic field study with an urban fire service. This validation forms part of the second stage of the curriculum re-construction project underway in the Vocational Technical Education Department of the Faculty of Education, and it is anticipated that the outcomes of stage two will serve to guide the construction of a corporate and employee development program.

We in the Department of Vocational/Technical Education believe that knowledge is always under re-construction, so in this project we decided to investigate how HRD practices are undertaken in the workplace and how knowledge about HRD is or can be re-constructed in an organization that is involved in the ongoing training and education of its membership. We believe that our work will make a contribution to the HRD research community and to our understanding of the processes associated with the development of occupational competence and, thereby, human resource development. The analysis of data to date has produced a framework of courses for new undergraduate and graduate degrees, while an instantiation of the theoretical underpinning is ongoing. The overall outcomes will be available in '97/98.

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